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TRANSMITTAL OF REPLY BRIEF		Docket No. 249768021US	
In re Application of: Greg Linden			
Application No. 09/538,679-Conf. #8745	Filing Date March 30, 2000	Examiner S. B. McAllister	Group Art Unit 3627
Invention: AUTOMATICALLY IDENTIFYING SIMILAR PURCHASING OPPORTUNITIES			
<p style="text-align: center;"><u>TO THE COMMISSIONER OF PATENTS:</u></p> <p>Transmitted herewith is a check, Reply Brief and Request for Oral Hearing in this application in response to the Examiner's Answer dated May 19, 2006</p> <div style="display: flex; justify-content: space-between;"><div style="width: 60%;"> _____ Michelle C. Macartney Attorney Reg. No. : 55,828 PERKINS COIE LLP P.O. Box 1247 Seattle, 98111-1247 (206) 359-8000</div><div style="width: 35%; text-align: right;"><p>Dated: _____ July 19, 2006</p></div></div>			



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: GREG LINDEN

APPLICATION No.: 09/538,679

FILED: MARCH 30, 2000

FOR: AUTOMATICALLY IDENTIFYING SIMILAR
PURCHASING OPPORTUNITIES

EXAMINER: STEVEN B. MCALLISTER

ART UNIT: 3627

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Sir:

This Reply Brief is responsive to the Examiner's Answer mailed on May 19, 2006, and is in furtherance of the Notice of Appeal filed on October 14, 2004, the Appeal Brief filed on January 7, 2005, and the Amended Appeal Brief filed on May 9, 2005.

In addition to this identification page setting forth the Appellant's name, the application number, the filing date of the application, the title of the invention, the name of the Examiner, the art unit of the Examiner and the title of the paper, this Reply Brief contains items under the following headings as required by 37 C.F.R. § 41.41 and MPEP § 1208:

- I. Status of Claims
- II. Grounds of Rejection to be Reviewed on Appeal
- III. Arguments

I. STATUS OF CLAIMS

Claims 1-36, 56, and 57 are pending in the application and stand rejected as of the Final Office Action dated June 14, 2004. Claims 37-41, 54, and 55 were withdrawn and claims 42-53 were canceled.

II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Rejection/objection of claim 1 under 35 U.S.C. § 112, first paragraph: Does the Specification fail to describe the claimed subject matter of "identifying as an auction an item unit that is a unit of the same item as the first unit" in such a way as to enable one skilled in the art to make or use the invention?

B. Rejection of claim 1 under 35 U.S.C. § 112, second paragraph: Is the use of the term "same" indefinite when used in the context of "units of the same item"?

C. Rejection of claims 1, 56, and 57 under 35 U.S.C. § 103(a): Would it have been obvious to modify the product web page of the Philips Semiconductor Web page ("Philips") and the inverse document frequency techniques disclosed in Ishikawa (US 5,848,407) and Sato (US 6,212,517) to arrive at appellant's methods for identifying auctions offering units of the same item using information about select terms occurring within the description of a first auction?

D. Rejection of claims 2-36 under 35 U.S.C. § 103(a): Would it have been obvious to modify the product web page of Philips and the inverse document frequency techniques disclosed in Ishikawa and Sato to arrive at appellant's score-based methods for identifying purchasing opportunities within a set of purchasing opportunities that are similar to a distinguished purchasing opportunity?

III. ARGUMENT

A. *Rejection under 35 U.S.C. § 112, first paragraph*

Based on the arguments made in the Appeal Brief filed on January 7, 2005, and the Amended Appeal Brief filed on May 9, 2005, appellant respectfully requests that the Board reverse the rejection of claim 1 under 35 U.S.C. § 112, second paragraph, and the corresponding objection to this claim.

B. *Rejection under 35 U.S.C. § 112, second paragraph*

Based on the arguments made in the Appeal Brief filed on January 7, 2005, and the Amended Appeal Brief filed on May 9, 2005, appellant respectfully requests that the Board reverse the rejection of claim 1 under 35 U.S.C. § 112, second paragraph.

C. *Rejection of claims 1, 56, and 57 under 35 U.S.C. § 103(a):*

Appellant's techniques as recited in claim 1 are directed to identifying auctions "offering units of the same item." Claim 1 recites:

- "displaying information about a first auction, the information including a description of a first item unit offered in the first auction"
- "receiving user input requesting information about other auctions offering item units that are units of the same item as the first item unit"
- "determining, for the description of the first item unit among descriptions of item units offered in a group of auctions including the first auction, the inverse document frequency of terms occurring within the description of the first item unit"

- "selecting a plurality of terms within the description of the first item unit having the largest inverse document frequencies"
- "for each of the selected terms, conducting a search for auctions in the group whose item descriptions contain the selected term"
- "for each auction found in at least one of the conducted searches, determining which of the selected terms occur in the auction's item description"
- "identifying as an auction offering an item unit that is a unit of the same item as the first item unit an auction among the found auctions where the sum of the inverse document frequencies of the selected terms that occur in the item description for the auction exceeds a threshold"
- "displaying information about the identified auction."

1. "Displaying information about a **first auction**, the information including a **description** . . ."

The Examiner compares the Product Description section of Philip's web site with appellant's claim element for "displaying information about a first auction, the information including a description of a first item unit offered in the first auction." Neither Philips nor the other applied references disclose auctions. Perhaps more importantly, there is no suggestion in any of the references to apply the described techniques in the context of auctions, especially in the context of finding, among multiple auctions, auctions offering item units that are units of the same item as an item unit in a first auction. For example, as maintained throughout prosecution and in the Appeal Briefs filed on January 7, 2005, and May 9, 2005, there is no reference in either Sato or Ishikawa to products/items for sale, product descriptions, item descriptions, auctions, or the like. Likewise, Philip's product description relates to a single item being offered

for sale (an SA571 Compandor) in a retail environment, and not in an auction environment.

Auction web sites are fundamentally very different than the traditional retail web site described in Philips. For example, with auction web sites, it is possible to have multiple different descriptions for similar items based on the fact that each individual auction seller has the opportunity to provide his or her own unique item description. This type of framework is clearly not disclosed in Philips, as described in detail below with respect to the claim element that recites "for each of the selected terms, conducting a search for auctions in the group whose item descriptions contain the selected term." Because Philips does not function anything like an auction web site, operation of the Philips web site does not present the same set of problems that appellant's claimed techniques were intended to solve. Accordingly, it would not be obvious to modify the Philips reference to an auction context, as asserted by the Examiner on page 15 of the Answer.

2. "Receiving user input requesting information about other auctions offering item units that are units of the same item as the first item unit"

The Examiner compares Philips' "Find Similar Items" button to appellant's claim element for "receiving user input requesting information about other auctions offering item units that are units of the same item as the first item unit." The archived Philips web page cited by the Examiner provides little insight as to the function of the "Find Similar Items" button or as to how the displayed product hierarchies on pages 2 and 3 of the reference allow a user to "find similar products." Even the Examiner admits that the effect of pressing the "Find Similar Items" button is "not clear." (See Answer at page 16.)

Upon close examination, the only product shown in either of the displayed product category hierarchies on the Philips web site is the product that is the subject of the catalog page itself (i.e., the SA571 Compandor item). (See Philips at pages 2 and 3.) Because only categories and not products (other than the

SA571 Compador item) are shown in the example, the only method for "finding similar products" that Philips could possibly suggest is category-based product browsing, which is clearly not the same as appellant's claimed techniques for finding similar auctions. Thus, as opposed to requesting information about "units that are units of the same item as the first item unit," selecting Philips' "Find Similar Items" button results in a request to display category information. Accordingly, Philips does not show "receiving user input requesting information about other auctions offering item units that are units of the same item as the first item unit."

Moreover, because the Philips reference offers neither multiple auctions for units of the same item nor multiple product descriptions for units of same item, it does not make sense for the "Find Similar Items" button to be used to request "information about other auctions offering item units that are units of the same item as the first item unit," as claimed by appellant. Rather, it makes more sense that, as pictured on page 3 of the Philips reference, the "Find Similar Items" button is used to request information related to product categories that the user may select from (e.g., via hyperlink) to look for other products within those product categories. Thus, for at least these reasons, offering a "Find Similar Items" button as disclosed in Philips is not analogous to appellant's claim element for "receiving user input requesting information about other auctions offering item units that are units of the same item as the first item unit."

3. "Determining . . . inverse document frequency," "selecting a plurality of terms . . ." and "for each of the selected terms, conducting a search for auctions . . ."

For the first time during the examination of this application, the Examiner in the Answer provides references to specific portions of Ishikawa and Sato on which he relies in making his obviousness rejections. For example, it appears that the Examiner compares appellant's claim elements for "determining, for the description of the first item unit among descriptions of item units offered in a group of auctions including the first auction, the inverse document frequency of

terms occurring within the description of the first item unit," "selecting a plurality of terms within the description of the first item unit having the largest inverse document frequencies," and "for each of the selected terms, conducting a search for auctions in the group whose item descriptions contain the selected term" to Ishikawa's techniques (described at col. 7, line 53 – col. 8, line 9 and col. 11, lines 33-45) for generating and displaying a list of documents that are ranked relative to one another based on occurrence frequency and/or inverse document frequency values and Sato's techniques (described at col. 6 lines 1-17; col. 7 lines 27-30; and Figure 8) for calculations performed by a related keyword generator 300 and an automatic searching option. (See Answer at pages 7 and 15.) Examination of these specific portions of Ishikawa and Sato reveals, however, that the description of inverse document techniques contained by these references does not disclose appellant's claim elements.

In particular, with respect to Sato, the Examiner asserts that Sato col. 6 lines 1-17 shows "determining for the specified text, the IDF of terms occurring in the text" and that Sato col. 7 lines 27-30 and Figure 8 show "selecting a plurality of search terms having the largest IDFs, searching the selected keywords," and "performing the search with each of the selected terms as claimed." (See Answer at pages 7 and 15.)

Sato's Figure 8 is a diagram showing how a related keyword generator 300 component of a keyword extracting system 100 generates keywords for use in the automatic searching of texts in a text base. In particular, the related keyword generator 300 examines the occurrence of keywords within documents and rates "the degree of importance of a [given] word" using an equation that considers the number of occurrences of the given word in a retrieved text, the number of retrieved texts which contain the given word, and the inverse document frequency of the given word. (See Sato's Equations (1) and (2) at col. 6, lines 1 and 13.) Sato then describes an automatic search option for performing searches of a text base having multiple texts stored within it. This automatic search option allows a user to further an initial search request via a

"user interface 400 [that] generates a query request by using a predetermined number, e.g., 3 of related keywords with the highest degrees of importance." (Sato at col. 7, line 27-30.)

Thus, while Sato describes using inverse document frequency information in determining a "degree of importance of a given word from a document," and then using this information to select automatic search terms for furthering a pending search initiated by a user, this is not the same as appellant's claim elements of "determining, for the description of the first item unit among descriptions of item units offered in a group of auctions including the first auction, the inverse document frequency of terms occurring within the description of the first item unit," "selecting a plurality of terms within the description of the first item unit having the largest inverse document frequencies," and "for each of the selected terms, conducting a search for auctions in the group whose item descriptions contain the selected term." For example, while Sato's "degree of importance" calculation/measure may consider inverse document frequency, it is not itself an inverse document frequency value. (See Sato's Equation (1).) In addition, Sato exclusively describes searching texts in a text base, which is not the same as searching auctions using terms from a description of a first item unit from a first auction.

With respect to Ishikawa, the Examiner asserts that Ishikawa col. 7, line 53 – col. 8, line 9 and col. 11, lines 33-45 show "determining which of the terms is in the found item's description and identifying a similar auction where the sum of the IDFs determine the similarity; or displaying information about the item" and "determining which keywords occur." (Answer at pages 7 and 15.)

Ishikawa describes techniques performed at a document ranking determining unit 4 that allow hypertext documents to be ranked relative to one another. (See Ishikawa at col. 7, lines 60 – col. 8, line 5.) A retrieval result displaying unit 5 then displays "the indexes of particular hypertext documents in the ranked order determined in the document ranking determining unit 4 as a

retrieval result." (Ishikawa at col. 8, lines 6-9.) Ishikawa discloses that the calculations used to perform the ranking of documents may involve the use of inverse document frequency values (defined as "an inverse value of the number of particular hypertext documents [from a set of documents], in which one particular word appears"). However, the inverse document frequency values described in Ishikawa are not used in a way that is analogous to the techniques claimed by appellant. In particular, Ishikawa describes that the inverse document frequency values for particular words are used to calculate "importance degrees" for particular hypertext documents so that the hypertext documents can be ranked relative to one another. (Ishikawa at col. 11, lines 26-43.) Using inverse document frequency values to calculate importance degrees for multiple individual documents so that they can be ranked relative to one another is very different from appellant's technique of "determining the inverse document frequency of terms occurring within the description of the first item unit" and then "selecting a plurality of terms within the description of the first item unit having the largest inverse document frequencies."

Moreover, it does not make sense to combine Philips product descriptions with the search techniques described in either Sato or Ishikawa to come up with appellant's techniques for searching auction item descriptions because the item descriptions claimed by appellant are inherently different than item descriptions in the type of retail environment disclosed in Philips, rendering the combination the Examiner proposes non-obvious.

For example, it appears from pages 2 and 3 of Philips that Philips stocks multiple units of the SA571 Compandor item and that such units may be listed under various product categories. However, there is nothing in the Philips reference suggesting that such units include a separate product description. In fact, the Philips reference appears to suggest the exact opposite—i.e., that every unit of the SA571 Compandor item that is available for sale in Philips is associated with the same item description. For example, page 1 of Philips a "Products & Packages Section," which ties the product description of page 1 with

multiple products, part numbers, and packages. Not only is this consistent with the Examiner's contention that "identical electronic parts are often sold under more than one part number" (see Answer at page 16), but it clearly shows that, regardless of part number or packaging, the provided description for the SA571 Compandor item stays the same across multiple units of this item. This provides further confirmation that the Philips web site does not utilize multiple descriptions when referencing different "units of the same item."

Because the Philips web site does not utilize multiple unique product descriptions when referencing units of the same item, it follows that it would not make sense to apply appellant's techniques in the context of the Philips retail web site—i.e., that there is no need in Philips to search multiple item descriptions to find units of the same item because only one item description exists to cover all units of the same item. In other words, by disclosing only a single description for multiple units of the same item, Philips fails to recognize the problem solved by appellant's claimed techniques and fails to suggest the possibility of achieving the results of appellant's claimed techniques. Accordingly, the combination of references with respect to claim 1 is improper.

4. "For Each Auction found . . . determining which of the selected terms occur in the auction's item description," "identifying as an auction offering an item unit that is a unit of the same item an auction . . ." and "displaying information about the identified auction"

The Examiner does not specifically address the last three elements of claim 1, which include "for each auction found in at least one of the conducted searches, determining which of the selected terms occur in the auction's item description," "identifying as an auction offering an item unit that is a unit of the same item as the first item unit an auction among the found auctions where the sum of the inverse document frequencies of the selected terms that occur in the item description for the auction exceeds a threshold," and "displaying information about the identified auction."

As with the other elements of claim 1, these elements are not disclosed in the references. For example, while Sato, as discussed above, describes performing an automated search for text documents, it does not discuss performing any additional actions with respect to text documents retrieved in the search results, let alone actions relating specifically to the final three claim elements of claim 1. Ishikawa and Philips also fail to disclose any such post-search determinations.

5. Conclusion

As discussed above and in the Appeal Briefs filed on January 7, 2005, and May 9, 2005, several elements of claim 1 are missing from the applied references, whether viewed alone or in combination. In addition, unless hindsight reconstruction is used, there is nothing in the teachings from the applied references that would have suggested the claimed subject matter to a person of ordinary skill in the art. Accordingly, appellant respectfully request that the Board reverse the rejection of claims 1, 56, and 57, noting that claims 56 and 57 depend from claim 1 and stand or fall with claim 1 for the purpose of this appeal.

D. Rejection of claims 2-36 under 35 U.S.C. § 103(a)

For the first time during the examination of this application, the Examiner in the Answer provides references to specific portions of Ishikawa and Sato on which he relies in making his obviousness rejection of claim 2. For example, the Examiner compares the combination of Philips and Ishikawa at col. 7, line 53 – col. 8, line 9 and col. 11, lines 33-45 to appellant's claim elements of "identifying purchasing opportunities of the set containing one or more key words," "establishing a purchasing opportunity score for each identified purchasing opportunity by summing the term score of the one or more key words occurring in descriptive information associated with the identified purchasing opportunities," and "displaying information about one or more of the identified purchasing opportunities." (Answer at pages 7 and 17.)

As discussed with respect to claim 1, Ishikawa describes that an inverse document frequency value may be utilized as one of several factors in calculating "importance degree" values for group of particular hypertext documents that are initially identified by performing a query based on user-supplied keywords. The calculated importance degree values are then used to rank identified hypertext documents relative to one another. (See Ishikawa at col. 7, line 53 – col. 8, line 9 and col. 11, lines 33-45.) The document ranking techniques described in Ishikawa are different from appellant's techniques for identifying and scoring purchasing opportunities in many ways. For example, unlike appellant's claimed key words, which are selected from an item description for a distinguished purchasing opportunity using term scores, Ishikawa's keywords are provided by a user. Accordingly, appellant's key words are not the same as Ishikawa's keywords. Moreover, Ishikawa's importance degrees are not the same as appellant's purchasing opportunity scores because of differences in how these two types of values are derived. Ishikawa's importance degrees are calculated as follows:

[I]n cases where the number of keywords input by the user is two or more, a product $TF \cdot IDF$ of one occurrence frequency TF and one inverse document frequency IDF is calculated for each keyword and each unified particular hypertext document, a sum of the products calculated for all keywords is adopted as an estimated value for each of the unified particular hypertext documents, and an importance degree for each of the unified particular hypertext documents is determined according to the estimated values.

(Ishikawa at col. lines 31-40.) In contrast, appellant's purchasing opportunity scores are determined by "summing the term score of the one or more key words occurring in descriptive information associated with the identified purchasing opportunities." Claim 2 provides that these term score values are also used to select key words which are used in initially identifying the purchasing opportunities. More particularly claim 2 recites "selecting as key words a plurality of terms having the highest term scores" and "identifying purchasing opportunities of the set containing one or more key words". In other words, claim 2 specifies that term scores are used in two different ways: (1) to select keywords

used in initially identify purchasing opportunities and (2) to score purchasing opportunities.

While Ishikawa describes summing the products of occurrence frequency (TF) values and inverse document frequency (IDF) values to calculate importance degrees, neither of these values are comparable to appellant's term scores because they are not used for both (1) selecting keywords used in initially identify purchasing opportunities and (2) scoring purchasing opportunities. Because the values used to calculate Ishikawa's importance degrees are not analogous to appellant's term scores and because of other discrepancies relating to Ishikawa's calculation of importance degrees, Ishikawa's importance degrees are clearly not the same as appellant's purchasing opportunity scores.

Finally, it does not make sense to combine Philips product descriptions with the search techniques described in either Sato or Ishikawa to come up with appellant's techniques for "identifying purchasing opportunities within a set of purchasing opportunities that are similar to a distinguished purchasing opportunity, the distinguished purchasing opportunity having descriptive information associated with it" because the item descriptions claimed by appellant are inherently different than item descriptions disclosed in Philips. This renders the combinations of Philips and Sato/Ishikawa (neither of which mention anything related to the products or items for sale) non-obvious.

For example, as described above with respect to claim 1, it appears from pages 2 and 3 of Philips that every unit of the SA571 Compandor item that is available for sale in Philips is associated with the same item description. Because the Philips web site does not utilize multiple unique product descriptions when referencing units of the same item, it follows that it would not make sense to apply appellant's techniques in the context of the Philips retail web site—i.e., that there is no need in Philips to search multiple item descriptions to find units of the same item because only one item description exists to cover all units of the same item. In other words, by disclosing only a single description for multiple

units of the same item, Philips fails to recognize the problem solved by appellant's claimed techniques and fails to suggest the possibility of achieving the results of appellant's claimed techniques. Accordingly, the combination of references with respect to claim 2 is improper.

As discussed above and in the Appeal Briefs filed on January 7, 2005, and May 9, 2005, several elements of claim 2 are missing from the applied references, whether viewed alone or in combination. In addition, unless hindsight reconstruction is used, there is nothing in the teachings from the applied references that would have suggested the claimed subject matter to a person of ordinary skill in the art. Accordingly, appellant respectfully request that the Board reverse the rejection of claims 2-36, noting that claims 3-36 depend from claim 2 and stand or fall with claim 2 for the purpose of this appeal.

Respectfully submitted,
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